

WHAT IS CLAIMED IS:

1. A communication system for performing optical communications, comprising:

5           a WDM device for providing supervisory control channels for supervising optical communications, said supervisory control channels including a first optical supervisory channel whose transmission band falls outside of the transmission band for main optical signals, and a  
10       second supervisory channel whose transmission band falls in an idle band in the transmission band for said main optical signals, said WDM device including supervisory control channel setting means for variably setting said supervisory control channels and WDM transmitting means  
15       for wavelength-multiplexing and -demultiplexing said supervisory control channels and said main optical signals; and

          a network managing device including setting information indicating means for indicating setting  
20       information for setting said supervisory control channels to said WDM device, and operating state managing means for managing a network operating state.

2. The communication system according to claim 1,  
25       wherein said setting information indicating means comprises means for using, as said setting information, at least one of wavelength information for setting a

wavelength of said second optical supervisory channel,  
section information for setting a section for which said  
second optical supervisory channel is to be used, and time  
information for setting a time zone in which said second  
5 optical supervisory channel is to be used.

3. The communication system according to claim 1,  
wherein said supervisory control channel setting means  
comprises means for using said first optical supervisory  
10 channel for indicating said setting information between  
WDM devices and using at least one of said first optical  
supervisory channel and said second optical supervisory  
channel for transmitting operation control information.

15 4. The communication system according to claim 1,  
wherein said WDM transmitting means comprises means for  
performing a switching control process with an optical  
signal system or an electric signal system and wavelength-  
multiplexing and -demultiplexing said main optical signals  
20 and said supervisory control channels.

5. The communication system according to claim 1,  
further comprising:

a repeater for controlling an amplification  
25 process of an internal repeater amplifier based on  
information of the supervisory control channels,  
multiplexing supervisory control channels with its own

state information and said main optical signals, and transmitting a multiplexed signal.

6. A WDM device for performing WDM optical  
5 communications, comprising:

supervisory control channel setting means for providing supervisory control channels for supervising optical communications, said supervisory control channels including a first optical supervisory channel whose  
10 transmission band falls outside of the transmission band for main optical signals, and a second supervisory channel whose transmission band falls in an idle band in the transmission band for said main optical signals, and variably setting said supervisory control channels; and

15 WDM transmitting means for wavelength-multiplexing and -demultiplexing said supervisory control channels and said main optical signals.

7. A network managing device for managing a  
20 network, comprising:

setting information indicating means for indicating, to a WDM device, setting information for setting supervisory control channels for supervising optical communications, said supervisory control channels  
25 including a first optical supervisory channel whose transmission band falls outside of the transmission band for main optical signals, and a second supervisory channel

whose transmission band falls in an idle band in the transmission band for said main optical signals; and

operating state managing means for managing a network operating state.